

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-24 (Canceled).

Claim 25 (Previously Presented): A process for producing [[a]] metal nanoparticle-nucleic acid ~~composite~~ composites comprising ~~at least one metal nanoparticle nanoparticles~~, comprising:

providing a nucleic acid specific metal complex;

reacting said nucleic acid specific metal complex with a nucleic acid to produce a metal complex-nucleic acid ~~conjugate~~ conjugates;

removing any non-conjugated metal complexes and/or non-conjugated by-products;
and

reacting the metal complex-nucleic acid ~~conjugate~~ conjugates with a reducing agent to produce the metal nanoparticle-nucleic acid ~~composite~~ composites,

wherein the metal complex-nucleic acid ~~conjugate~~ conjugates are formed by the specific reacting of the nucleic acid specific metal complex with bases of the nucleic acid, wherein the ~~at least one metal nanoparticle-nucleic acid composite~~ composites are catalytically active towards electroless metallization, and

wherein the ~~at least one nanoparticle nanoparticles~~ nanoparticles in the metal nanoparticle-nucleic acid ~~composite~~ composites cannot be visualized by atomic force microscopy.

Claim 26 (Previously Presented): The process according to claim 25, wherein the nucleic acid is reacted while dissolved in solution, immobilized on a substrate or in a semisolid state with said nucleic acid specific complex.

Claim 27 (Previously Presented): The process according to claim 25, wherein the nucleic acid is selected from the group consisting of DNA, RNA, PNA, CNA, oligonucleotides, oligonucleotides of DNA, oligonucleotides of RNA, primers, A-DNA, B-DNA, Z-DNA, polynucleotides of DNA, polynucleotides of RNA, triplexes of nucleic acids quadruples of nucleic acids and combinations thereof.

Claim 28 (Previously Presented): The process according to claim 25, wherein the nucleic acid is double-stranded or single-stranded.

Claim 29 (Currently Amended): The process according to claim 25, wherein the nucleic acid specific metal complex is ~~selected from the group consisting of~~ dichloro (2,2':6',2''-terpyridine)platinum (II) and ~~cis-diaminodichloroplatinum (II)~~.

Claim 30 (Currently Amended): The process according to claim 25, wherein the metal complex-nucleic acid ~~conjugate is~~ conjugates are removed from a non-conjugated metal ~~complex~~ complexes and/or the non-conjugated by-products by chromatography, precipitation or rinsing.

Claim 31 (Currently Amended): The process according to claim 25, wherein the metal complex-nucleic acid ~~conjugate is~~ conjugates are reacted with at least one reducing agent selected from the group consisting of a boron hydride, a borohydride salt, a Lewis base: borane complex of formula $L:BH_3$, wherein L is an amine, an ether, a phosphine, a sulfide, a hydrazine, a hydroxylamine, a hypophosphite salt, a formate salt, a dithionite salt, or H_2 .

Claim 32 (Previously Presented): The process according to claim 31, wherein the reducing agent is a gaseous reducing agent.

Claim 33 (Currently Amended): The process according to claim 25, wherein the ~~at least one metal nanoparticle~~ nanoparticles of the ~~composite~~ composites comprises at least one metal selected from the group consisting of Fe, Co, Ni, Cu, Ru, Rh, Pd, Ag, Os, Ir, Pt, Au and combinations of these metals.

Claim 34 (Currently Amended): The process according to claim 25, wherein the ~~at least one metal nanoparticle~~ nanoparticles in the metal nanoparticle-nucleic acid ~~composite~~ composites ~~has~~ have a diameter smaller than 3 nm.

Claim 35 (Currently Amended): The process according to claim 25, further comprising treating the ~~at least one metal nanoparticle~~ nanoparticles within the metal nanoparticle-nucleic acid ~~composite~~ composites with an electroless plating solution to enlarge the ~~at least one metal nanoparticle~~ nanoparticles.

Claim 36 (Currently Amended): The process according to claim 35, wherein the ~~at least one metal nanoparticle~~ nanoparticles within the metal complex-nucleic acid conjugates ~~are conjugate~~ is treated while dissolved in solution, immobilized on a substrate or in a semisolid state with an electroless plating solution.

Claim 37 (Previously Presented): The process according to claim 35, wherein the at ~~least one metal nanoparticle~~ nanoparticles within the metal nanoparticle-nucleic acid ~~composite is~~ composites are treated with an electroless plating solution comprising at least one of the metal selected from the group consisting of Fe, Co, Ni, Cu, Ru, Rh, Pd, Os, Ir Ag, Pt, Au and combinations thereof.

Claim 38 (Currently Amended): The process according to claim 35, wherein the at ~~least one metal nanoparticle~~ nanoparticles of the ~~composite is~~ composites are treated with an electroless plating solution comprising at least one material selected from the group consisting of magnetic Fe, Co, Ni, a combination of these metals, and a combination of these metals with boron (B) or phosphorus (P).

Claim 39 (Currently Amended): ~~[[A]] metal~~ Metal nanoparticle -nucleic acid ~~composite~~ composites produced by the method of claim 25, wherein the ~~at least one metal nanoparticle has~~ nanoparticles have a diameter of less than 3 nm.

Claim 40 (Currently Amended): A process for the manufacture of a nanowire, comprising:

providing ~~[[a]] metal nanoparticle-nucleic acid composite~~ composites comprising at ~~least one metal nanoparticle~~ particles produced by a process comprising reacting a nucleic acid specific metal complex with a nucleic acid to produce ~~[[a]] metal complex-nucleic acid conjugate~~ conjugates;

removing any non-conjugated metal complexes and/or non-conjugated by-products;

reacting the metal complex-nucleic acid ~~conjugate~~ conjugates with a reducing agent to produce a metal nanoparticle-nucleic acid ~~composites~~ composite; and

growing the metal nanoparticle of the ~~composite~~ composites by electroless deposition of a metal selected from the group consisting of Fe, Co, Ni, Cu, Ru, Rh, Pd, Os, Ir, Ag, Pt, Au and alloys thereof to produce said nanowire,

wherein the metal complex-nucleic acid ~~conjugate~~ is conjugates are formed by the specific reacting of the nucleic acid specific metal complex with bases of the nucleic acid, and

wherein the ~~at least one metal nanoparticle~~ nanoparticles of the metal complex-nucleic acid ~~conjugate~~ is conjugates are catalytically active towards electroless metallization, and

wherein the ~~at least one metal nanoparticle~~ nanoparticles of the metal complex-nucleic acid ~~conjugate~~ conjugates cannot be visualized by atomic force microscopy.

Claim 41 (Currently Amended): A nanowire produced by the process of claim 40, wherein said nanowire comprises more than one metal nanoparticle, and wherein the nanowire comprises insulating spaces between the individual nanoparticles positioned along a nucleic acid strand of said nucleic acid of said metal nanoparticle-nucleic acid composites ~~composite~~.

Claim 42 (Previously Presented): A small-scale network of electronic circuit, comprising at least one nanowire according claim 41.

Claim 43 (Previously Presented): The process according to claim 26, wherein the nucleic acid is reacted in a semisolid state, and wherein the semisolid state is a gel.

Claim 44 (Canceled).

Claim 45 (Currently Amended): The process according to claim 30, wherein the metal complex-nucleic acid ~~conjugate~~ conjugates are removed from the non-conjugated metal complex and/or the non-conjugated by-products by gel filtration chromatography, ion exchange chromatography, ethanol precipitation, water rinsing or aqueous salt solution rinsing.

Claim 46 (Canceled).

Claim 47 (Previously Presented): The process according to claim 40, wherein said growing is a controlled growing.

Claim 48 (New): The method of Claim 25, wherein the nanoparticles in the metal nanoparticle-nucleic acid composites have a width of 2 nm.

Claim 49 (New): The method of Claim 25, wherein the nanoparticles in the metal nanoparticle-nucleic acid composites have a width of 2 nm or less.

Claim 50 (New): The process of Claim 40, wherein the nanoparticles in the metal nanoparticle-nucleic acid composites have a width of 2 nm.

Claim 51 (New): The process of Claim 40, wherein the nanoparticles in the metal nanoparticle-nucleic acid composites have a width of 2 nm or less.

Claim 52 (New): The process according to Claim 40, wherein the nucleic acid specific metal complex is dichloro (2,2':6',2''-terpyridine)platinum (II).

Claim 53 (New): The method of Claim 25, wherein the nucleic acid specific metal complex further comprises at least one member selected from the group consisting of an intercalating agent, a groove binding agent, and an alkylating agent.

Claim 54 (New): The method of Claim 53, wherein the nucleic acid specific metal complex comprises an intercalating agent.

Claim 55 (New): The method of Claim 53, wherein the nucleic acid specific metal complex comprises a groove binding agent.

Claim 56 (New): The method of Claim 53, wherein the nucleic acid specific metal complex comprises an alkylating agent.

Claim 57 (New): The method of Claim 53, wherein the nucleic acid specific metal complex comprises an intercalating agent, and wherein the intercalating agent is an anthraquinone.

Claim 58 (New): The method of Claim 53, wherein the nucleic acid specific metal complex comprises a groove binding agent, and wherein the groove binding agent is a cationic porphyrin.

Claim 59 (New): The method of Claim 53, wherein the nucleic acid specific metal complex comprises an alkylating agent, and wherein the alkylating agent is a nitrogen mustard.

Claim 60 (New): The process of Claim 40, wherein the nucleic acid specific metal complex further comprise at least one member selected from the group consisting of an intercalating agent, a groove binding agent, and an alkylating agent.

Claim 61 (New): The method of Claim 60, wherein the nucleic acid specific metal complex comprises an intercalating agent.

Claim 62 (New): The method of Claim 60, wherein the nucleic acid specific metal complex comprises a groove binding agent.

Claim 63 (New): The method of Claim 60, wherein the nucleic acid specific metal complex comprises an alkylating agent.

Claim 64 (New): The method of Claim 60, wherein the nucleic acid specific metal complex comprises an intercalating agent, and wherein the intercalating agent is an anthraquinone.

Claim 65 (New): The method of Claim 60, wherein the nucleic acid specific metal complex comprises a groove binding agent, and wherein the groove binding agent is a cationic porphyrin.

Claim 66 (New): The method of Claim 60, wherein the nucleic acid specific metal complex comprises an alkylating agent, and wherein the alkylating agent is a nitrogen mustard.